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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,227	11/19/2001	Yusuke Tsutsui	492322002500	8107

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EXAMINER

AWAD, AMR A

ART UNIT PAPER NUMBER

2675

DATE MAILED: 08/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,227

Applicant(s)

TSUTSUI ET AL.

Examiner

Amr Awad

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The references cited in the Information Disclosure Statement filed on May 14, 2002 have been considered by the Examiner; see attached PTO-1449.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii (European Patent Publication NO. EP 1020840 provided by the Applicant) in view of Kornher et al. (US patent NO. 5,745,088).

As to independent claim 1, Ishii (figure 1) teaches an active matrix display that includes a plurality of pixel element electrodes disposed in a matrix configuration (col. 7, Paragraph # 24), and a plurality of retaining circuit (memory circuit 103) disposed for the pixel element electrodes, wherein the active matrix display device operates under two operation modes one mode is a normal operation mode and the other mode is a memory operation mode in which a digital image is presented based on a voltage held by the retaining circuit (col. 7, line 55 through col. 8, line 39).

Ishii does not teach that at least one of the retaining circuits is disposed as a common retaining circuit for two or more of the pixel elements, and the two or more of the pixel element electrodes shares output of the common retaining circuit.

However, Kornher (figure 1) teaches an array of pixels (10) having receiving elements (11) and a plurality of retaining circuits (memory cells 12) wherein the retaining circuits are disposed as common for two or more of the pixel elements (col. 2, lines 25-55).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Kornher having the retaining circuit shared by two or more of the pixel element electrodes, to be incorporated to Ishii's device so as motivated by Kornher, to be able to have a single memory cell controls a set of multiple elements, which reduces the circuitry per element, and therefore reduce the cost of the device and increase the manufacturing yields, and also reduces the rate of loading data, which reduces the pin-counts and lowers the frequency requirements (col. 1, lines 55-63).

As to claims 2-3, in Kornher's device is shown to have a common retaining circuit (12) shared by four pixel elements (claim 3) (col. 2, lines 51-54). However, Kornher states that each memory cell (12) has a fanout of four elements, but the invention is applicable to other fanout values, which fairly reads on claim 2 (col. 2, lines 26-32).

As to independent claim 4, the claim is substantially similar to independent claim 1 except that claim 4 recites, "Wherein the number of the retaining circuits is smaller than the number of pixel elements". Such limitation is similar to the limitation of claim 1 having the retaining circuits disposed as common retaining circuit for two or more of the pixel elements, which as shown above taught by Kornher. Therefore, the rejection of claim 1 equally applies to claim 4.

As to claims 5-6, in Kornher's device is shown to have the number of common retaining circuits (12) is 1/4 the number of the pixel elements (claim 6) (col. 2, lines 51-54). However, Kornher states that each memory cell (12) has a fanout of four elements, but the invention is applicable to other fanout values, which fairly reads on claim 5 (col. 2, lines 26-32).

As to claim 7, the claim is substantially similar to claim 4 and is analyzed as previously discussed with respect to claims 1 and 4 above.

As to claims 8-9, in Kornher's device is shown to have the number of common retaining circuits (12) is 1/4 the number of the pixel elements (claim 9) (col. 2, lines 51-54). However, Kornher states that each memory cell (12) has a fanout of four elements, but the invention is applicable to other fanout values, which fairly reads on claim 8 (col. 2, lines 26-32).

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As to claim 10, Kornher states "each (memory cells" having a single bit storage capacity. However, the scope of the invention could also include "memory cells" that store more than one bit or that have additional logic circuitry", (col. 2, lines 37-41). Such teaching fairly reads on the limitation of claim 10.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pinkham et al. (US patent NO. 6,288,712) teaches a system and a method for reducing peak current and bandwidth requirements in a display driver circuit.

Sato et al. (US patent NO. 6,456,267) teaches a liquid crystal display with memory cells.

Pinkham (US patent NO. 6,518,945) teaches a replacing defective circuit element by column and row shifting in a flat-panel display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday-Friday, between 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras can be reached on (703)305-9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4750.

A handwritten signature in black ink, appearing to read "Amir Ahmed Awad". The signature is fluid and cursive, with a large loop at the end.

A.A.
August 5, 2003